2003 Activity report

The IRSST, research in motion

Institut de recherche Robert-Sauvé en santé et en sécurité du travail

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Diane Gaudet

MESSAGE

from the President and CEO

Let's ask ourselves the question: If no one were there to initiate reflection, to provide a sense of direction, to establish priorities and to set clear orientations, would occupational health and safety research meet as many needs? Would it cover as many sectors? Would it promote applicable results that provide concrete solutions to the increasingly complex problems presented by workplaces?

DECODING AND INFLUENCING If no organization were devoting itself 100% to decoding needs, translating them into research topics, launching fifty new projects each year, and documenting and solving problems of all kinds, would the working community be as capable of making its equipment, processes and organization safer? Who would have mobilized and motivated researchers to focus their efforts on occupational health and safety? To work together to tackle problems in a multidisciplinary fashion? To join forces so that a greater share of subsidy funds is devoted to occupational health and safety research? Without an organization dedicated to research, could the network of 280 external researchers from universities, research centres and private firms whose projects are funded by the IRSST obtain the same support and, above all, the same funding capacity?

STIMULATING AND TRANSFERRING If scientific quality represents an indispensable condition of peer recognition, influence and transfer also constitute key elements since they ensure the dissemination of knowledge and the application of results. But, to have influence locally and abroad, it is also necessary that people create strong ties with national and international research organizations, chair standardization committees, and support networks that promote the development of occupational health and safety research and the transformation of results into practical solutions for businesses. It serves no purpose to achieve scientific breakthroughs and make new knowledge available if no one benefits. Sharing a vision is good. Encouraging the involvement of parties based on true partnership with a view to applying lasting, tangible results is indispensable.

If no one were monitoring the situation, setting up programs and promoting discussions on emerging problems by creating scientific activities, organizing conferences and stimulating interest in the sector, would occupational health and safety knowledge be as abundant as it is today? The IRSST alone provides stakeholders with about some one thousand documents, such as reports, guides, methods and utilities. In addition, partnerships, like those we entered into in 2003 with the Institut national de recherche et de sécurité (INRS) in France or with SafetyNet in Newfoundland, have increased research capacity by multiplying human, physical and financial resources.

SUPPORTING AND COLLABORATING We may ask ourselves whether issues of occupational hygiene and the environmental and biological monitoring of workers in companies would have evolved at the same pace if network members had not been supported by highly certified reference laboratories with personnel offering broad and often unique expertise.

I would add that it would serve no purpose being the leader if no one were following! If no group were equipped to transfer knowledge. If no association, whether employer, worker, scientific, professional or joint and sector-based, were collaborating on most of our research projects by participating on follow-up committees. It must be said that we have come a long way together over the past 23 years. When we look back at where we started, we have reason to be proud of the useful results achieved to date.

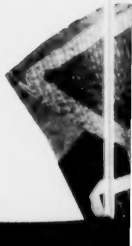
This wealth, this diversity of viewpoints stems mainly from the union of strong, dedicated and convincing people. Whether from our Board of Directors, our Scientific Advisory Board, our scientific and technical personnel, the CSST, joint sector-based associations, the health network or other bodies, these leaders have put the IRSST at the forefront.

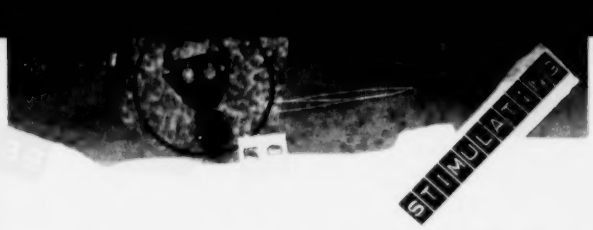
Obviously, there will always be unknown territory to explore, new ground to break, equations to verify. Otherwise, there would be no more changes, developments or scientific breakthroughs.

In this changing world, we plan to continue supporting businesses and their employees and the occupational health and safety network in their efforts to prevent industrial accidents and occupational diseases as well as to rehabilitate workers. We want to hold our course by making improvements, based on the challenges that lie ahead and the methods at our disposal. To this end, we are questioning ourselves, notably through a vast reflection exercise focusing on the development of the IRSST and its strategic position, an exercise in which many of you will be asked to participate. We know who we are. But we also want to know what we must achieve in order to meet workplace demands even better, in the best interest of all those who value the development of knowledge and progress.

In the meantime, if we allow ourselves to answer the very first question without being presumptuous, we would say that... if the IRSST did not exist, occupational health and safety research would not be as extensive and there would undoubtedly be fewer researchers interested in this field.

Diane Gaudet
President and CEO





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2003
in numbers

Research

202 projects were active in 2003*
- 47 new
- completed 84
- 37 ongoing.

58 other projects were under development.

108 partner organizations in the network were involved in active projects in 2003.

39 committees of the CSST and its network, including regulatory committees, had at least one IRSST representative.

24 national and international standardization committees invited the IRSST to serve on them in an expert capacity.

31 scholarships were awarded for a total of $420,000.*

* Summaries of all projects carried out or funded by the IRSST, as well as the complete list of scholarship recipients, are available on the IRSST's Web site: www.irsst.qc.ca.

Laboratory services

52,856 environmental, toxicological and microbiological analyses were done, 84% of which were for our partners in the prevention-inspection network: CSST, regional health and social services boards, local community service centres and joint sector-based associations.

4,739 hours were devoted to the calibration, maintenance and repair of direct-reading and measuring instruments, 97% of which for the prevention-inspection network.

498 days were assigned to expertise requests, most of which were from the CSST and its network.

Dissemination

38 IRSST publications
- 35 research reports and guides published by the IRSST.
- 3 technical data sheets and guides published in collaboration with partners.

89 scientific publications (*reading committees*) related to projects carried out or financed by the IRSST:
- 42 articles published in journals;
- 39 articles published in conference proceedings;
- 8 other publications, including book chapters, theses, etc.

113 presentations given by IRSST personnel or funded researchers at scientific conferences or events organized by partners.

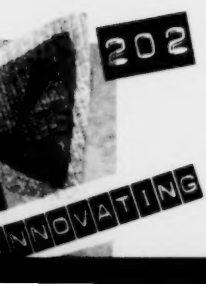
17 courses given by IRSST personnel during training sessions organized by our network partners, universities and research collaborators.

20 non-technical articles published in *Prévention au travail*, the magazine published by the CSST and the IRSST.

3,828 publications distributed in response to requests.

47,716 downloads of research reports from the IRSST's Web site.

321,300 visits to the IRSST's Web site, representing an average of 882 visitors per day. A more than one-third increase over the previous year.



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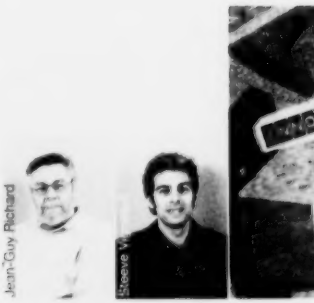
Research and partnership

exercising leadership

Over the past 23 years, the IRSST has been guided by a clear and precise line of conduct: to carry out research to help reduce risks to workers' health and safety. To this end, the IRSST has equipped itself with various mechanisms that provide workplaces with scientific research that is not only useful, but also of high quality. Thus, in 2003, it succeeded in bringing together some 350 scientists around 202 projects, all considered relevant and important by its governing bodies, consisting of employer and worker representatives and members of the scientific community.

Among the actions taken in 2003 to respond to the increasingly numerous and diversified requests from workplaces, the IRSST implemented a business plan aimed at increasing its partnerships. The annual co-funding objective of $750,000 was greatly exceeded. At the same time, these new collaborative agreements also allow the IRSST to improve its research performance, expand its pool of occupational health and safety researchers, and multiply the scientific impact.



On the program: forklift trucks, safety and partnership

Forklift trucks are the cause of many serious and even fatal accidents, which result in major compensation expenses every year. Since 1994, the IRSST has invested nearly half a million dollars in research to make this type of vehicle safer. Initially, the projects were designed mainly to ensure the safety of operators in case of vehicle rollovers. However, given the diversity of the problems related to the use of forklift trucks and in order to better support workplaces in their prevention activities, in 2003, the IRSST combined the research orientations it plans to pursue in this area into a five-year mini-program.

Guided by consultation on client needs and all the expertise developed by internal and external researchers, Jean-Guy Richard, ergonomist at the IRSST, presented stakeholders with the main objectives of this plan: 1) preventing rollovers, 2) protecting operators in case of rollovers, 3) reducing risks of collision, and 4) developing expertise and prevention tools for this type of vehicle.

To ensure the success of this program, the IRSST solicited the collaboration and expertise of scientists from various organizations. As a result, five research teams, including two in Québec and three at the Institut national de recherche et de sécurité (INRS) in France, are now working together in a consistent manner to solve forklift safety problems. Moreover, a major partnership agreement will be made official in early 2004 with INRS-France, which also considers the safety and ergonomics of forklift trucks a priority.

Ensuring knowledge transfer through succession

A subsidy from the Fonds Jeunesse Québec allowed the IRSST to hire Steeve Vigneault, a new resource dedicated to the mini-program component focusing on knowledge transfer and the promotion of research results. His objectives include promoting the creation of a network of researcher and stakeholder partners and supporting them in their activities by mainly offering science monitoring. In addition, two electronic newsletters, one for researchers and the other for workplace stakeholders, were created.

OVER THE MONTHS

JANUARY

- Launching of the book *Industrial solvents – Health, safety, substitution*, a reference work on the prevention of the occupational risks associated with these products. Under the direction of Michel Gérin of the Université de Montréal, it combines the expertise of 11 specialists from various fields: Marc Baril, Jaime Lara, Louis Lazure and Mireille Vennes of the IRSST; Denis Bégin and Jérôme Lavoué of the Université de Montréal; Louis-Philippe Durocher of the Centre hospitalier de l'Université de Montréal; Jean-Pierre Bonneville of Groupement technique des assureurs; Simon Smith of 3M Canada; and Florence Pilliére of INRS France.

FEBRUARY

- Dr. Florence Pilliére, physician-toxicologist in the Medical Studies and Assistance Department of INRS-Paris, gave a lecture within the context of the activities of the Groupe pour l'animation et la recherche en toxicologie industrielle (GARTI), the Environmental and Occupational Health Department of the Université de Montréal and the IRSST. She described the activities of the French institute, discussed the institutional and regulatory context of biological monitoring, and presented BIOTOX, a biotoxicological guide for occupational physicians for monitoring workplace exposure to chemicals.

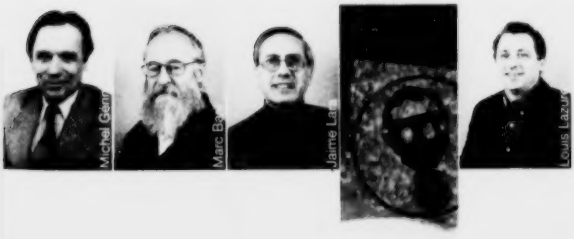
MARCH

- The Ordre des chimistes du Québec, the CSST and the IRSST joined forces to organize a joint colloquium bringing together over 200 people around the theme of the professional responsibility of chemists in the area of occupational health and safety.
- More than 200 people participated in the Discussion Forum of UQAM's GM Chair in Ergonomics, under the theme *Is rotation a solution?*

MAY

Third presentation of the annual IRSST colloquium on workplace chemical exposure standards. Close to 300 people attended this event, organized jointly with the Threshold Limit Value Review Committee of the American Conference of Governmental Industrial Hygienists (ACGIH).

- Holding of the IRSST's third Scientific and Technical Recognition Day. This year's event held particular appeal since the members of the Scientific Advisory Board agreed to interrupt their work to hold discussions with IRSST personnel and provide demonstrations of research tools.



2003 HIGHLIGHTS

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Asthma and agriculture: creation of two major research centres

In 2003, the IRSST's partnership with the Canadian Institutes of Health Research (CIHR) proved very prod e since it led to the creation of two major research centres in Québec, one on asthma in the workplace and the other on health and safety in agriculture.

√ Benefiting from financial aid of $2,135,250 from the CIHR and $180,000 from the IRSST, researchers from Hôpital du Sacré-Cœur de Montréal, the Université de Montréal and McGill University pooled their expertise to set up a research centre for asthma in the workplace. Under the direction of Dr. Jean-Luc Malo, pneumologist and head of respiratory health research at Hôpital du Sacré-Cœur, this centre will allow the IRSST to access a large network of experts, to strengthen ties between researchers, and to provide support to students who have decided to specialize in this field. This exchange of knowledge between partners and stakeholders will make it possible to transfer results more rapidly to asthmatics and people at risk of becoming asthmatic.

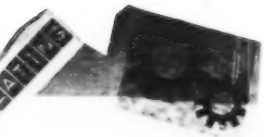
√ People working in agricultural production are exposed to many health and safety risks. Given the number and diversity of these risks, research in this field often proves complex and requires the contribution of multidisciplinary teams. Thanks to $2,140,000 in funding from the CIHR and $180,000 from the IRSST, Dr Yvon Cormier of Laval University and Dr James A. Dorsman of the University of Saskatchewan will set up a research centre on health and safety in agriculture. Bringing together researchers from different disciplines, this centre will further the development of knowledge on the various problems related to this field of activity, encourage the training of researchers, and promote the transfer of knowledge to workplaces.

Since its creation, the IRSST has financed some sixty projects in the area of respiratory health in the workplace, more than twenty of which are on asthma.

- In collaboration with the CSST, two IRRST chemists published *Cleaning and decontamination of workplaces containing beryllium – Synthesis of good practices* in a single guide. Chantal Dion and Guy Perrault compiled all relevant and useful information for personnel in charge of removing beryllium from contaminated premises.

- Jacques Lesage from the IRSST was appointed Technical Link of the Occupational Safety and Health Administration (OSHA). As such, he evaluates and comments on the quality of the information on the page of this U.S. organization's Web site devoted to isocyanates. This appointment, which recognizes this scientist's expertise in the area of isocyanates, was made by the editor of the site, Bob Curtis, from OSHA.

- The IRSST's presence at the Convention of the Association québécoise pour l'hygiène, la santé et la sécurité du travail (AQHSST) was even more significant than in previous years. Brigitte Roberge became the president of the association, and the IRSST's ex-CEO, Jean Yves Savoie, was presented with the Antoine-Aumont award for his outstanding contribution to occupational hygiene, health and safety. In addition to funded researchers, about fifteen members of the IRSST's personnel and students provided training and gave lectures; also, Laurent Giraud won the 3M scholarship for his presentation on conveyor safety. The VEMPire utility, the result of the joint efforts of Daniel Drolet and colleagues from the Centre de santé Cloutier-du-Rivages, facilitates access to different Web sites on the 695 substances in Schedule 1 of the *Regulation respecting occupational health and safety*. It generated considerable interest at this convention, where the closing remarks were given by Diane Gaudet, president and CEO of the IRSST.



Vibrations between Québec and Ontario

The IRSST and the Workplace Safety and Insurance Board (WSIB) of Ontario decided to pool their efforts and their skills in order to tackle the problem of vibration for mining vehicle operators. Both organizations are contributing major funds to finance the work of the two teams in charge of this project. The Ontario group is focusing more on field vibration measurements, while at the IRSST, Paul-Emile Boileau, André Plamondon, Alain Delisle and Christian Larivière are looking mainly at the effects of vibration on operators by using biomechanical measurements.

Partners in training

The IRSST reconfirmed the importance it gives to the development of the next generation of researchers by becoming associated with the Centre de recherche interdisciplinaire en réadaptation du Montréal métropolitain (CRIR) in October 2003. This agreement was developed by Jean-Claude Martin, Director of Quality and Special Projects Management at the IRSST. It allows the two organizations to jointly offer a postdoctoral scholarship to Ph.D. holders who wish to pursue their education in the field of rehabilitation and workforce re-entry.

The meticulous process of evaluating candidates ended for Carole Bellazzi and her colleague France Lafontaine when the IRSST welcomed the 31 students from nine universities and other graduate schools to whom it awarded $420,000 in scholarships for the year 2003-2004. Ten of these recipients also obtained a scholarship from another funding agency, a double honour that reflects their dynamism and the excellence of their work.

The IRSST's participation in the American Industrial Hygiene Conference and Exhibition (AIHCE) in Dallas. For the first time at this event, Daniel Drolet and Jacques Lesage offered the course entitled *Application of Microsoft Excel to Industrial Hygiene and Laboratory Analysis*. For the sixth year, Jacques Lesage and his colleagues from industry, NIOSH and OSHA presented the course named *Current Issues in Toxicology, Occupational Medicine, Industrial Hygiene and Regulation*. Jacques Lavoie received the award for best poster in the *General Industrial Hygiene* session for his presentation on the biological contamination and ergonomic limitations of trucks equipped with an arm for collecting garbage.

Launching of an on-line directory on safety devices. Accessible and user-friendly, this tool makes things easier for those who want to promote the prevention of occupational accidents by making industrial machines or processes safer. Developed by Réal Bourbonnière, François Lemay and Renaud Daigle of the IRSST, it groups together, on one Web site, useful information about manufacturers of the most commonly used safety devices.

Scientific influence

becoming leadership

Constantly concerned about the impact of its research results, the IRSST once again encouraged the presence of its scientists at national and international forums. Thus, in 2003, the IRSST's personnel gave 113 presentations at conferences, colloquiums and symposiums. The conclusions of work carried out or funded by the IRSST were also featured in 89 scientific publications.

Chemistry between the IRSST and the ACGIH

Intrigued by the work carried out in Québec on toxicological interactions, the members of the Threshold Limit Value (TLV) Review Committee of the prestigious American Conference of Governmental Industrial Hygienists (ACGIH) decided to hold their spring meeting in Montreal and, at the same time, to participate in the annual IRSST symposium. With a full house of nearly 300 participants, the event not only helped bring the two organizations closer together, but also allowed the Québec contingent to benefit from the committee members' impressive background in chemical exposure. This event was made possible thanks to the efforts of Daniel Drolet, chemist at the IRSST, and the numerous contacts that he established with the TLV Committee.

Hoping to continue exchanges between the United States and Québec on the problem of chemical exposure standards in the workplace, the TLV Committee asked Claude Viau, professor in the Environmental Health and Occupational Health Department of the Université de Montréal and an IRSST-funded researcher, to become one of its members. Mr Viau is the first Quebecer to sit on this committee.

Is rotation a solution?

In February, over 200 people took part in the Discussion Forum of the GM Chair in Ergonomics of the Université du Québec à Montréal (UQAM), under the theme *Is rotation a solution?* Supported financially by the IRSST, the event was co-chaired by Nicole Vézina of UQAM and Marie St-Vincent of the IRSST. Business representatives, employer and union delegates, as well as several occupational health and safety professionals from the CSST and the public health network attended this forum, which was an opportunity for transferring knowledge, but also for discussing issues regarding rotation in the workplace.

Hat trick for machine safety

The third International Conference on the Safety of Automated Industrial Systems took place in Nancy, France, in October 2003. Two hundred people, representing 14 countries, were able to appreciate the progress in the IRSST's work thanks to the presentations of two of its engineers, Joseph-Jean Paques, also a member of the event's scientific committee, and Réal Bourbonnière. The idea for this scientific gathering was launched by the IRSST in 1999, and then picked up by Germany in 2001. Next meeting: the United States in 2005.

Expertise

demonstrating leadership

The strength of any research institute obviously lies in the knowledge and expertise developed by its scientific and technical personnel. It is due to this knowledge acquired in often very specialized fields that the IRSST's researchers were invited, in 2003, to sit on 24 national and international standardization committees. In addition, to support the CSST's strategies and operations, they also participate, as experts, in 39 committees of the CSST and its network.

Beryllium operation (Be)

As a result of the expertise she has developed over the past two years, Chantal Dion, chemist at the IRSST, is now at the centre of every beryllium operation undertaken by the CSST. Co-chair of the research sub-committee of the Technical Committee on beryllium of the CSST's Board of Directors, she is also a member of five other committees mandated primarily to prevent the occurrence of diseases related to exposure to this metal. The year 2003 was punctuated with major developments in the Be file:

- Preparation of a mini research program on the monitoring and control of worker exposure to Be, for which certain work is already underway and other work will begin in 2004.
- Launching of the guide *Cleaning and decontamination of workplaces containing beryllium – Synthesis of good practices*, written jointly with Dr. Guy Perrault, chemist.
- Presentation to the Technical Committee of the CSST's Board of Directors of a document prepared by the research sub-committee identifying potential research avenues for Be.

Biological risks: France is very interested

Since 1987, Jacques Lavoie, industrial hygienist at the IRSST, has been involved in evaluating biological risks in workplaces. His work earned him an invitation to sit on a steering committee of INRS-France, whose mandate is to orient research on biological risks. Moreover, the groundwork was laid in 2003 for a partnership agreement with the INRS dealing specifically with bioaerosols. This agreement will further facilitate France-Québec exchanges on this problem, while extending cooperation to other issues such as air quality in waste treatment.

This year, the Ministry of Health and Social Services also made use of the cutting-edge expertise developed by Jacques Lavoie by asking him to participate on the ministry's committee on precautionary measures against severe acute respiratory syndrome, or SARS. A video and colloquium were prepared to convey recommendations to the parties concerned on the best preventive practices in terms of personal protection, particularly regarding the lungs, skin and eyes.

Also a member of the federal committee of the National Research Council of Canada (NRC), whose work is aimed at ensuring healthy indoor environments, Jacques Lavoie helped organize a major Canada-wide symposium for researchers and workplace representatives.

Advocate of a proactive approach locally as well as nationally and internationally, Jacques Lavoie directs the IRSST's Bioaerosol research action group. In 2003, the work carried out by the members of this group helped establish avenues for research, partnership and collaboration, the initial results of which should be seen in 2004.

2003

- The IRSST's president and CEO, Diane Gaudet, went to Prague to participate in the annual meeting of the International Group of Directors of Occupational Health and Safety Institutes of the main countries in Europe, America and Australia. She observed there that nations around the world share the same concerns, which opens the door to productive collaboration.

2003

- October 8th was a proud day when three excellence awards presented annually by the magazine *Travail et santé* to students who have written the best scientific articles describing their research results were won by two IRSST trainees and one scholarship recipient. Sébastien Gagné won first prize for an article on isocyanates; Annabelle Viau-Guay, second prize for an article on the integration of health and safety into project design; and Michel Boutin, third prize, also for an article on isocyanates.
- At the invitation of the IRSST and McGill University's Department of Epidemiology, Biostatistics and Occupational Health, Dr. Mark Hoover, from the National Institute for Occupational Safety and Health, gave a lecture on the aspects of respiratory dosimetry and aerosols related to the evaluation of exposure for sensitivity to beryllium and on berylliosis.
- Autumn marked the Grand rendez-vous SST, which every year brings together some 200 exhibitors and attracts over 5,000 visitors. The IRSST booth featured the highlights of a major statistical study profiling sectors and professions at risk in Québec. Conducted by François Hébert, Patrice Duguay and Paul Massicotte from the IRSST, this study underscores the relevance of producing sex-based indicators, given the increase in women in the workforce in a growing number of economic activities and professions. In addition, the authors identify the service sector as a concern of the future in terms of risks for workers' health and safety.
- Held parallel to the Grand rendez-vous under the theme *Young People and Occupational Health and Safety at Work*, the 2nd Public Forum of the Association of Workers' Compensation Boards of Canada (AWCBC) is an event in which the IRSST actively participates. Moreover, Denise Granger is a member of the program's national committee. Marc Baril was responsible for organizing and staging the poster session, which attracted 24 posters, three of which portrayed the work of members of the IRSST's personnel.
- Launching of the guide *Belt conveyor safety – General information, protection against hazardous phenomena* – User guide, produced by the CSST and based on the research of Serge Massé and Laurent Giraud.

Laboratory services

Due to the quality of their personnel, the diversity of their analyses, their unique expertise and their numerous certifications, the IRSST's laboratories are recognized as a benchmark in the industry. Dedicated 100% to occupational health, the Laboratory Services and Expertise technicians and professionals are true industrial hygiene specialists. In addition to providing their services to the CSST and its network, the laboratories also make a vital contribution to research development.

Quality first and foremost

Following the appointment of Jacques Lesage as director, Laboratory Services and Expertise underwent an administrative restructuring in order to better meet the needs of its clients and further promote the unique competence of its personnel. Thus, chemist Daniel Drolet also handles customer service, while Pierre Larivière is mainly responsible for direct-reading instruments. Two new chemists have also been hired, one of whom is in charge of quality assurance.

New certifications

The acoustics and electromagnetism laboratories obtained the national CLAS certification issued by the National Research Council of Canada (NRC). The IRSST is the only organization in Canada to hold this type of certification in the area of acoustics.

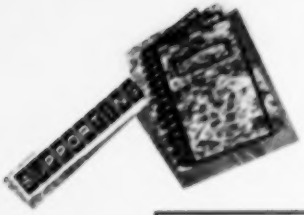
A driving force in scientific research in industrial hygiene, the IRSST's laboratories hold 11 national or international accreditations or certifications issued by the American Industrial Hygiene Association (AIHA), NRC's Calibration Laboratory Assessment Service, or the Occupational Safety and Health Administration (OSHA).

These new certifications confirm the IRSST laboratories' benchmark role in the field of acoustics and electricity, and recognize the precision and accuracy of their calibration services for the measuring instruments used by Québec industrial hygienists. They were obtained thanks to the efforts of an entire team: Lambert Laliberté, Henry Scory, Pierre Larivière, Gilles Paradis, Clémence Duchesne, Joann Villeneuve and Lynda Cloutier.

Special meeting of the Scientific Advisory Board during which members were presented the strategic positioning process and business plan of the IRSST's partners. Employer and worker representatives as well as members of the scientific community reacted positively to these presentations, which generated a great deal of interest.

A Chinese protective glove manufacturer acquired a TDM-100 tomodynamometer. This instrument for evaluating the resistance of protective clothing to cuts, developed by Christian Sirard, Serge Masse and Jaime Lara of the IRSST, is manufactured and distributed by the Québec firm RGI. Many companies and certification agencies have already acquired this device, notably in France, the United Kingdom, the United States, Switzerland and Japan.

Michel Boutin won the award for best francophone oral presentation at Concordia University's 6th Graduate Student Colloquium for his presentation on the identification of isocyanates generated by the combustion of polyurethane-based car paint.



Knowledge transfer

sharing leadership

The appropriation of research results by workplaces has always been a priority for the IRSST, as is the sharing of its expertise and knowledge. Among the actions taken in 2003 to facilitate the transfer of these results was the creation of an electronic newsletter presenting the latest research news at the IRSST. Prepared by the Communications Division, *Info IRSST* has over 2,300 subscribers.

Consortium on transfer

The IRSST joined forces with the Administration Faculty of the Université de Sherbrooke and the Newfoundland research group SafetyNet to set up an interdisciplinary research consortium on the transfer of knowledge on work-related accidents and their context. By pooling their expertise and resources, the members of the consortium sought to increase their research and transfer capacity. To the great satisfaction of the three partners and the head of the undertaking at the IRSST, Alain Lajoie, their project received a $1 million grant from the Canadian Institutes of Health Research (CIHR).

Second wind for the diagnosis of occupational asthma

Workers in the Quebec City region now have access to a new, ultra-modern diagnostic centre for occupational asthma, thanks to two provocation systems developed at the IRSST and delivered to Quebec City's Hôpital Laval in 2003. The first system exposes patients to solid aerosols, like sawdust, flour, psyllium and guar gum, and the second, to vapours or liquid aerosols. Hôpital Laval thus becomes the second occupational asthma diagnostic centre in Québec, after Montreal's Hôpital du Sacré-Cœur, to be equipped with these new safe diagnostic methods. These exposure systems are the basis of a diagnostic method resulting from several years of collaboration between physicist engineer Yves Cloutier and his team from the IRSST's Aerosol Metrology Laboratory, and Dr. Jean-Luc Malo and Dr. André Cartier, from the Pneumology Department of Hôpital du Sacré-Cœur in Montreal.

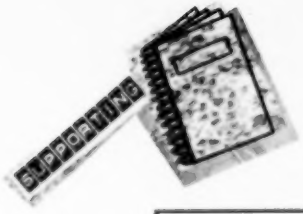
Yves Cloutier

Jacques Millette

Alain Lajoie

Sébastien Gagné received the award for best science poster at the Toxen symposium for his presentation of an analytical method for identifying ultra-traces of hexamethylene diisocyanate (HDI) in the air.

Accompanied by Yves Rousseau, a representative of the IRSST's Scientific Advisory Board, and Jacques Millette, the Director of Communications, Diane Laudet and Alain Lajoie presented the 2004 Annual Research Plan to the Board of Directors committee on IRSST programming. "Consistent with our strategic orientations and dovetailing perfectly into the 2001-2005 master plan, this annual plan does not mark the beginning of a radical change," points out Alain Lajoie, Director of Operations. "It is an important document that takes into account new realities such as changes in the working world and developments in the research sector."



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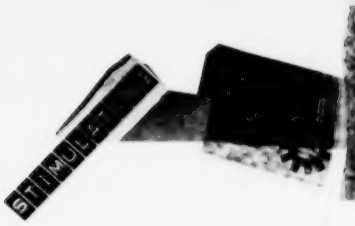

Overview

of the IRSST

The IRSST team is made up of about 130 individuals, including scientific personnel consisting of some 80 researchers, professionals and technicians from various disciplines including ergonomics, industrial hygiene, chemistry, physics, engineering, sociology, anthropology and demography. Coordinated by the Operations Division, internal research personnel belong to one of the following five teams: Safety Ergonomics, Work Organization, Safety Engineering, Occupational Hygiene, and Laboratory Services and Expertise. Funded research files are coordinated by scientific advisors on the Customer Service team. Quality and ethics are the responsibility of the Quality and Special Projects Management team.

The IRSST's external network consists of some 280 researchers from universities, research centres and private firms.

Financing

revenues $20,866,880

- CSST 84.6%
- Laboratory services 10.7%
- External contracts 4.2%
- Other 0.5%

expenses $19,987,183

- Internal research 41.9%
- External research 21.6%
- Laboratory services 10.9%
- Finance and administration 10.3%
- Communications 4.7%
- External contracts 4.0%
- Management 3.8%
- Customer service and technical support 2.9%

Organizational chart

Board of Directors

Jacques Lamonde, Chairman

Executive Committee

Jacques Lamonde, Chairman

President and CEO

Diane Gendron

Scientific Advisory Board

Quality and Special Projects Management

Jean-Claude Martin

DIVISIONS

Finance and Administration

Jean-Guy Martel

Financial Resources

Louise Lafontaine

Human Resources

Jean-Guy Martel

Information Technologies

Jacques Roy

Physical Resources

Jean-Guy Martel

Operations

Alain Lajoie

Customer Service

Alain Lajoie (acting)

Work Organization

Denise Granger

Safety Ergonomics

Denise Granger (acting)

Safety Engineering

Paul-Emile Boileau

Occupational Hygiene

Nicole Goyer

Laboratory Services and Expertise

Jacques Lesage

Communications

Jacques Millette

Board of Directors and Scientific Advisory Board

The Board of Directors determines the IRSST's orientation, development framework and funding.

CHAIR
Jacques Lamonde

WORKER REPRESENTATIVES
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Andrée Bouchard
Pierre Dupuis
Claude Faucher
Jean Lavallée
Henri Massé
Roger Valois

EMPLOYER REPRESENTATIVES
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Franco Fava
Gaston Lafleur
Sylvain Lebel
François-E. Pelletier
Jean-Paul Robin, M.D.
Gilles Taillon

OBSERVER
Anne Parent

IRSST MANAGEMENT
Diane Gaudet

The Scientific Advisory Board advises the president and chief executive officer. Its mandate is to assess the relevance, importance and scientific quality of internal and external research projects and programs.

CHAIR
Diane Gaudet

EMPLOYER REPRESENTATIVES
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Richard Lapointe
Roger M. Laporte
Alain Neveu, M.D.

WORKER REPRESENTATIVES
Micheline Boucher
Daniel Flynn
Robert Guimond
Serge Trudel

MEMBERS OF THE SCIENTIFIC AND TECHNICAL COMMUNITIES
Charles E. Beaulieu, Ph.D.
Jean-Marc Brodeur, M.D.
Christine Colin, M.D., Ph.D.
Mireille Mathieu, Ph.D.
Yves Rousseau, Ph.D.
R. Charles Terreault

OBSERVERS
Alain Albert
Alain Lajoie

Charles Beaulieu was presented with the Armand-Frappier award by the Québec government to highlight his outstanding achievements in the development of research establishments and in the administration and promotion of scientific research. The Scientific Advisory Board is a veritable breeding ground for winners of the Armand-Frappier award, since Mr. Beaulieu was the fourth member to receive this prestigious distinction, after Louis Berlinguet, Maurice L'Abbé and Lionel Boulet.

During the year, the Scientific Advisory Board welcomed three new members from the scientific and technical communities, Christine Colin, Mireille Mathieu and Yves Rousseau, as well as a new employer representative, Robert Borduas. The IRSST would like to sincerely thank Maryse Lassonde, Renée Liboiron and Jules Brodeur for their contribution to the scientific vitality of the IRSST.

List of publications

and presentations (Related to projects either carried out or financed by IRSST)

IRSST PUBLICATIONS

All IRSST publications are peer reviewed.

ESTIN, C.-É., R. ROBERGE, J. ARMANTAGE, N. SOHIER. *Les interventions sur les galactivases à pales électroniques*. Montréal, IRSST, 2003. 39 p. (Études et recherches, Rapport de recherche R-373).

GUIMARE, M., S. BEAUDRAND, M. MARIER, C. LAVALLÉE, J. ALTAMIRANO. *Les simulateurs conformes sur l'activité au cours de l'engagement ergonomique des projets industriels : étude cas de conception de cabines de véhicules dans l'industrie métallurgique*. Montréal, IRSST, 2003. 154 p. (Études et recherches, Rapport de recherche R-329).

HAULI, P.-É., J. ROUTIN. *Évaluation microéconomique de quelques mesures à réduire l'exposition aux vibrations main-bras*. Montréal, IRSST, 2003. 36 p. (Études et recherches, Rapport de recherche R-340).

LBOUCHIE, M., D. GRANGER, S. TOULOUSE. *Étude comparative des problèmes musculo-squelettiques et des accidents chez les techniciens du cinéma et de la vidéo*. Montréal, IRSST, 2003. 143 p. (Études et recherches, Rapport de recherche R-336).

AIN, J.-P., C. BRUN, J. MARTEL, H. MERS. *Évaluation de la charge mentale au travail : une analyse des pratiques de gestion de ressources humaines*. Montréal, IRSST, 2003. 100 p. (Études et recherches, Rapport de recherche R-342).

OUTIER, V., I. LAZURE. *Mémento sur l'utilisation des pompes à vide abdominale*. Montréal, IRSST, 2003. 50 p. (Études et recherches, Rapport de recherche R-352).

AUD, R.-É. CLOUTIER, S. LA TOUR. *Les risques aux agentes de sécurité à domicile et de soins infirmiers par les services de maintien à domicile des CLSC*. Montréal, IRSST, 2003. 110 p. (Études et recherches, Rapport de recherche R-346).

LOUIS, A., S. LARIVIÈRE, A. PLAMONDON, D. IMBEAU. *Troubles musculo-squelettiques et biomécanique : impact du mobilier de bureau sur la posture et la sollicitation musculaire du membre supérieur*. Montréal, IRSST, 2003. 40 p. (Études et recherches, Rapport de recherche R-326).

GUILLEAULT, P.-É., M. DOUCET. *Évaluation des risques de contrainte thermique en mines profondes*. Montréal, IRSST, 2003. 34 p. (Études et recherches, Rapport de recherche R-360).

ONNE-PROULX, J., J.-R. GARNIER, Y. BEAUCHAMP. *ISO 9000 et après : impact sur la performance en SST dans l'entreprise manufacturière*. Montréal, IRSST, 2003. 66 p. (Études et recherches, Rapport de recherche R-327).

IRECTION DES OPÉRATIONS. *Guide d'ajustement des valeurs d'exposition admissibles (VEA) pour les horaires de travail non conventionnels (2e édition revue et mise à jour)*. Montréal, IRSST, 2003. 25 p. (Études et recherches, Guide technique de recherche, T-21).

LOHARE, D., M. LEVILLETTE, Y. CORMIER, J. LAVOIE, F. DESARDINS, H. ROLOD. *Analyse morphologique des études de cas pour la mise à jour d'un outil d'intervention*. Montréal, IRSST, 2003. 77 p. (Études et recherches, Rapport de recherche R-341).

LIGUAY, P., F. HÉBERT, P. MASSICOTTE. *Les indicateurs de santé, d'accidents et de maladies professionnelles en santé et en sécurité du travail au Québec : rapport par profession en 1996-1997*. Montréal, IRSST, 2003. 277 p. (Études et recherches, Rapport de recherche R-332).

OU, M., D.-É. AUBIN, M. OLIVIANU, R. RENOT, M. SOUTCHOUK. *Modélisation d'un chariot élévateur et de son conducteur pour améliorer la sécurité lors de renversements latéraux*. Montréal, IRSST, 2003. 40 p. (Études et recherches, Rapport de recherche R-322).

ÉBERT, F., P. LUQUAY, P. MASSICOTTE. *Les indicateurs de santé, d'accidents et de maladies professionnelles en santé et en sécurité du travail au Québec : rapport par secteur d'activité économique en 1996-1997*. Montréal, IRSST, 2003. 379 p. (Études et recherches, Rapport de recherche R-333).

IMBEAU, D., B. FARBOS, R. BÉLANGER, S. MASSÉ. *Évaluation des activités d'ouverture et de fermeture de couvercles de puits d'ascenseur et d'élingues*. Montréal, IRSST, 2003. 49 p. (Études et recherches, Rapport de recherche R-331).

LAN, A., B. DAGUE, D. LEROUX, D. CHAILLA. *Validation d'un dénombrement fait à un taux de polyethylene haute densité au moyen de profiles métalliques normalement utilisés pour les porosités et les rayures*. Montréal, IRSST, 2003. 140 p. (Études et recherches, Rapport de recherche R-339).

LAJOIE, J., S. GUÉRIN, C. LEFRDN. *Intégration de la santé et de la sécurité du travail lors de la conception du réaménagement d'un centre de tri de matières recyclables*. Montréal, IRSST, 2003. 34 p. (Études et recherches, Rapport de recherche R-347).

LAZURE, L., H. ABDOULAYE, J. LESAGE, M. CHARETTE. *Évaluation du confinement des aires de préparation lors de l'application de peinture*. Montréal, IRSST, 2003. 66 p. (Études et recherches, Rapport de recherche R-353).

L'ESPÉRANCE, A. *Logiciel d'analyse et de gestion du bruit DUEL2000 – Phase 2 : intégration de mesures expérimentales et évaluation du puissance acoustique type*. Montréal, IRSST, 2003. 78 p. (Études et recherches, Rapport de recherche R-357).

OGEL, P. M., J. DURAND, B. JACHYN, J. LEMAIRE, S. POITRAS, S. STOCK. *Exposition de la base de données nouvelles dans le projet Shutrooms sur la prise en charge des zones contaminées reliées au travail avec un suivi de 6 à 4 ans*. Montréal, IRSST, 2003. 57 p. (Études et recherches, Rapport de recherche R-348).

MARCHAND, A., R. BOHER. *La prévention du risque de chute posturographique chez les employés de sécurisation victimes de vols à main armée*. Montréal, IRSST, 2003. 77 p. (Études et recherches, Rapport de recherche R-330).

MARCHAND, D., M. LAVOIE, C. PEPIN, Y. BEAUDET, G. ROUIN, S. VALIPEUR. *Documentation des entraînements présentés dans l'air ambiant des usines fondeurs du Québec traitant la fibre de potrin*. Montréal, IRSST, 2003. 45 p. (Études et recherches, Rapport de recherche R-354).

OSTIGUY, C., S. MALO, P. ASSELIN. *Synthèse des connaissances scientifiques sur les risques d'atteinte à la santé suite à une exposition professionnelle au manganèse*. Montréal, IRSST, 2003. 41 p. (Études et recherches, Rapport de recherche R-339).

OSTIGUY, C., S. MALO, P. ASSELIN. *Synthesis of Scientific Knowledge on the Health Risks Following Occupational Exposure to Manganese*. Montréal, IRSST, 2003. 39 p. (Studies and research projects, Report R-339).

OSTIGUY, C., S. TRANCHAND, J. LESAGE, H. V. TRA. *Développement exploratoire d'une approche pour l'évaluation des années en milieu de travail et documentation des procédés industriels utilisant ces substances*. Montréal, IRSST, 2003. 44 p. (Études et recherches, Rapport de recherche R-338).

RICHARD, M.-J. *Évaluation du profil de la surface des pistes de roulement du métro de Montréal*. Montréal, IRSST, 2003. 65 p. (Études et recherches, Rapport de recherche R-344).

ROY, M., D. ST-JACQUES. *Équipes semi-autonomes et santé et sécurité du travail : mise à jour de la recension des écrits et du modèle d'organisation du travail en équipes semi-autonomes*. Montréal, IRSST, 2003. 76 p. (Bilan de connaissances, Rapport de recherche B-065).

ROY, M., D-L. BLODEAU. *Stratégie d'intervention en situation conflictuelle : rapport d'une démarche d'ergonomie de conception*. Montréal, IRSST, 2003. 50 p. (Études et recherches, Rapport de recherche R-336).

STOCK, S. EVQ. *Impact de la douleur au cou et aux membres supérieurs sur la vie quotidienne – Développement et validation d'une nouvelle mesure de l'état de santé pour les travailleurs atteints de lésions musculo-squelettiques au cou et des membres supérieurs*. Montréal, IRSST, 2003. 90 p. (Études et recherches, Rapport de recherche R-355).

ST-VINCENT, M., D. DENIS, F. OUELLET, S. BEAUDRAND. *Étude de cas : apport de différentes sources de données à la réalisation d'une intervention ergonomique visant la prévention des troubles musculo-squelettiques*. Montréal, IRSST, 2003. 140 p. (Études et recherches, Rapport de recherche R-326).

TOULOUSE, G. *L'intégration de la prévention SST au management des normes ISO 9000 par la macroergonomie : une recension des écrits suivie d'un projet pilote*. Montréal, IRSST, 2003. 113 p. (Études et recherches, Rapport de recherche R-324).

TRUDEAU, S., R. TARDIF, P.-O. DROZ, S. CHAREST-TARDIF, S. PERRAULT-MARIT, D. DROLET. *Quantification de la variabilité biologique à l'aide de la modélisation – Fabrication d'un guide de chargé pour la surveillance biologique de l'exposition*. Montréal, IRSST, 2003. 90 p. (Études et recherches, Rapport de recherche R-337).

VEZINA, N., M. ST-VINCENT, B. DUFOUR, V. ST-JACQUES, S. OUELLETTE. *La pratique de la rotation des postes dans une usine d'assemblage automobile : une étude exploratoire*. Montréal, IRSST, 2003. 199 p. (Études et recherches, Rapport de recherche R-343).

VEZINA, N., S. STOCK, M. SAIREG, V. SAINT-JACQUES, A. MARCHAND, P.-P. BUDENAU, M. BOUCHER, G. DIABAT, A. CARRI. *Problèmes musculo-squelettiques et organisation modulaire du travail dans une usine de fabrication de bottes – Phase 2 : Étude de l'intégration des recommandations*. Montréal, IRSST, 2003. 126 p. (Études et recherches, Rapport de recherche R-345).

Reports published in collaboration with partners

CHAMPOUX, D., J.-P. ERVIN. *Une cartographie des risques en milieu de travail – Secteur de l'hébergement*. Montréal, IRSST, 2003. 40 p. (Fiche technique RF-336).

SIMONEAU, S., M. ST-VINCENT, D. CHICOINE. *Work-Related Musculoskeletal Disorders (WMSDs) – A Better Understanding for More Effective Prevention*. Montréal, IRSST, 2003. 58 p. (Report RG-336 and).

DION, C., S. PERRAULT. *Nettoyage et décontamination des lieux de travail ou il y a présence de Amiante – Synthèse des connaissances pratiques*. Montréal, IRSST, 2003. 29 p. (Rapport R-334).

SCIENTIFIC PUBLICATIONS

Articles published in journals

BARIL, R., D. BERTHELETTE, F. MASSICOTTE. "Early return to work of injured workers: multidimensional patterns of individual and organizational factors". *Safety Science*, vol. 41, No. 4, 2003, p. 277-300.

BARIL, R., J. CLARKE, M. FRIESEN, S. STOCK, D. CYR. "Management of return to work programs for workers with musculoskeletal disorders: a qualitative study in three Canadian provinces". *Social Science and Medicine*, vol. 57, No. 11, 2003, p. 2101-2114.

BEAUCHAMP, M., N.H. GOSSELIN, R. C. BRUNET, D. SAMSON, M. J. DUMOULIN, G. CARRIER. "A toxicokinetic model of manganese and its metabolites as a tool to assess human exposure and risk through measurements of urinary biomarkers". *Toxicological Sciences*, vol. 73, 2003, p. 180-194.

BOURDOUXHE, M., L. GRATTON. "Transfer of situation: the results of an intervention in the field of the prevention of musculoskeletal disorders". *Applied Ergonomics*, vol. 34, No. 1, 2003, p. 3-11. (www.elsevier.com/locate/apergo).

BOURDOUXHE, M., S. TOULOUSE. "Health and safety among the technicians working with robots". *Journal of Human Ergology*, vol. 30, No. 1-2, p. 113-119.

ROUTIN, M., J. LESAGE, C. OSTIGUY, M.-J. BERTRAND. "Investigating the thermal degradation of polymers: a systematic approach". *Applied Occupational and Environmental Hygiene*, vol. 18, p. 724-729.

ROUTIN, M., J. LESAGE, C. OSTIGUY, M.-J. BERTRAND. "Comparison of IR and metabolite urine biomarkers' correlation for the identification of polyurethane thermal degradation products". *In Journal of Analytical and Applied Pyrolysis*, vol. 70, 2003, p. 605-617.

CHAMPOUX, D., J. P. BRUN. "Occupational health and safety management in small size enterprises: an overview of the situation and avenues for intervention and research". *Safety Science*, Vol. 41, No. 4, 2003, p. 301-318.

CHATIGNY, C., N. VEZINA, J. PRÉVOST. "Formation et soutien à l'apprentissage des conditions (in)sensibles à la polyvalence et à la santé et sécurité au travail". *Pistes* (Perspectives interdisciplinaires sur le travail et la santé), Vol. 5, No. 2, 2003. (www.pistes.uqam.ca/v5n2/articles/v5n2a6.htm).

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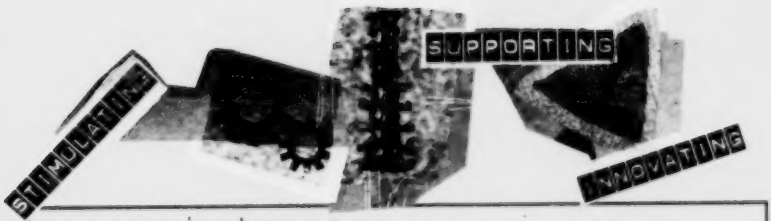

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